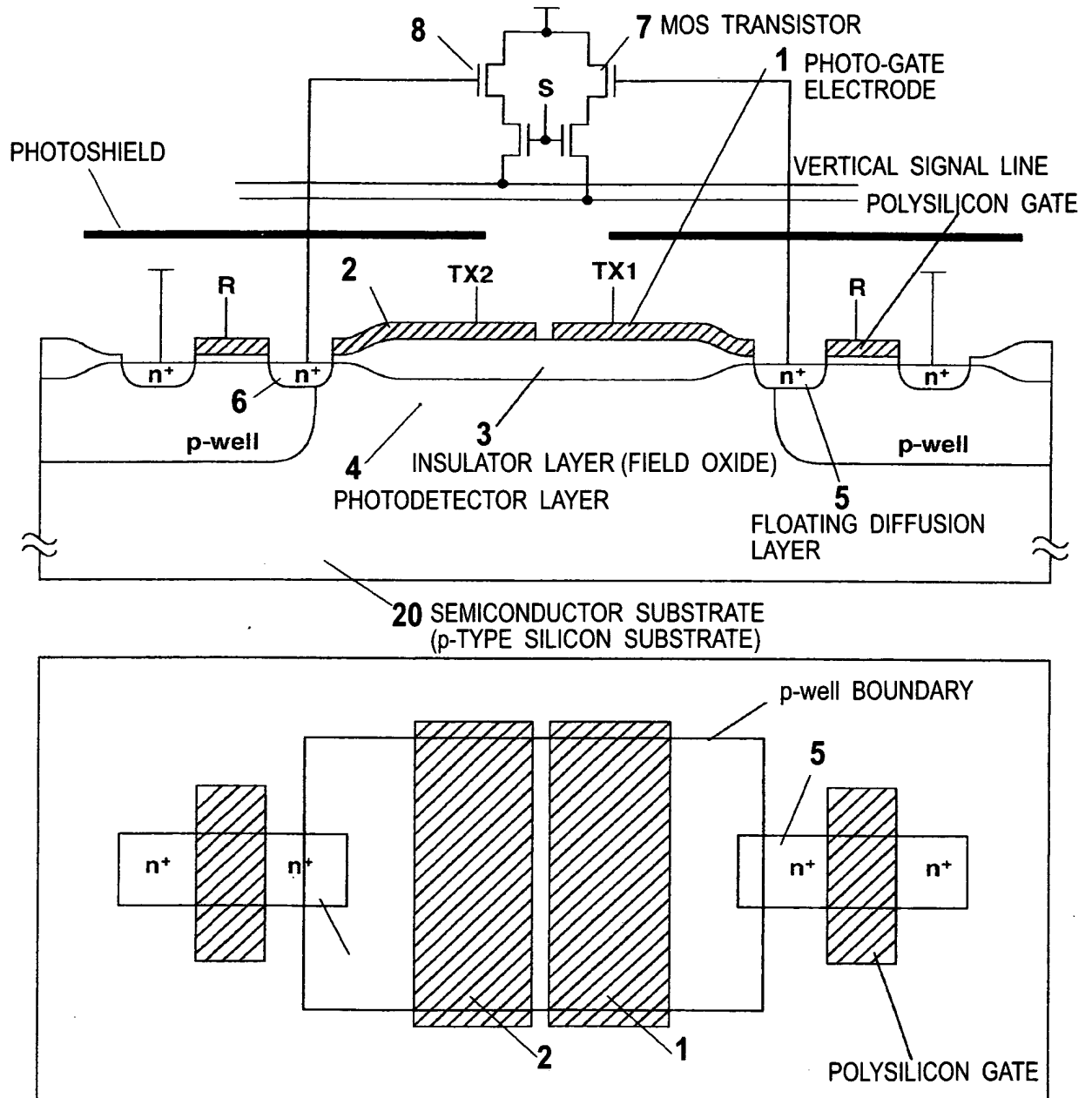


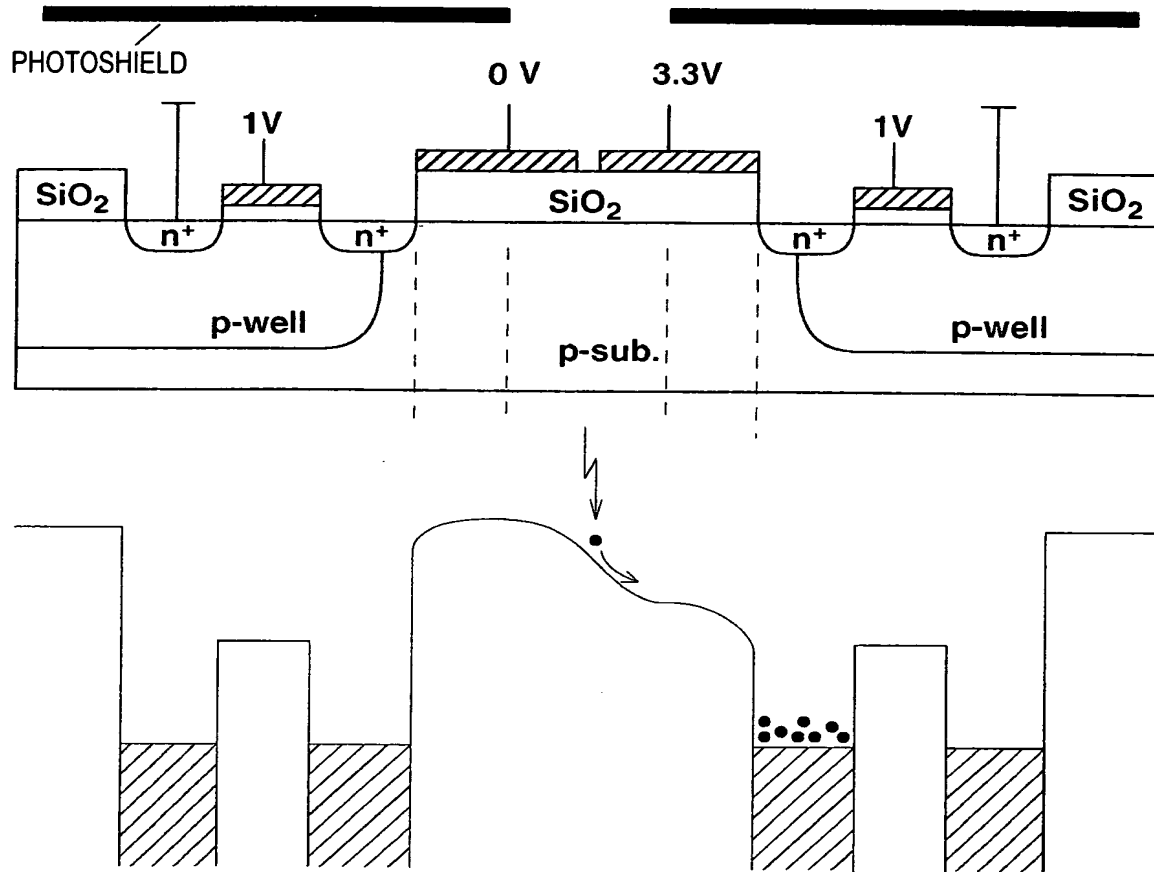
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FIG. 1



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FIG. 2



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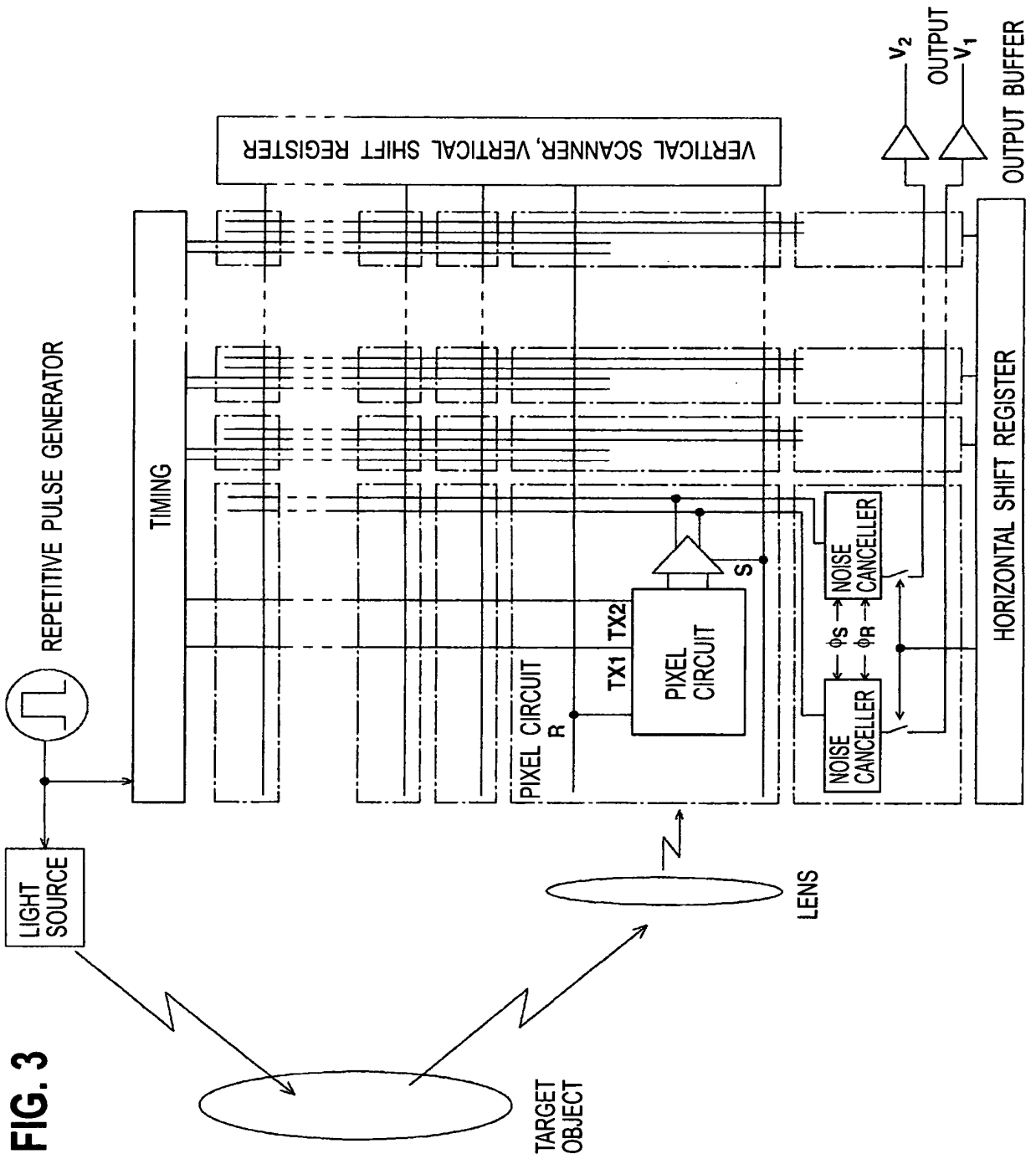
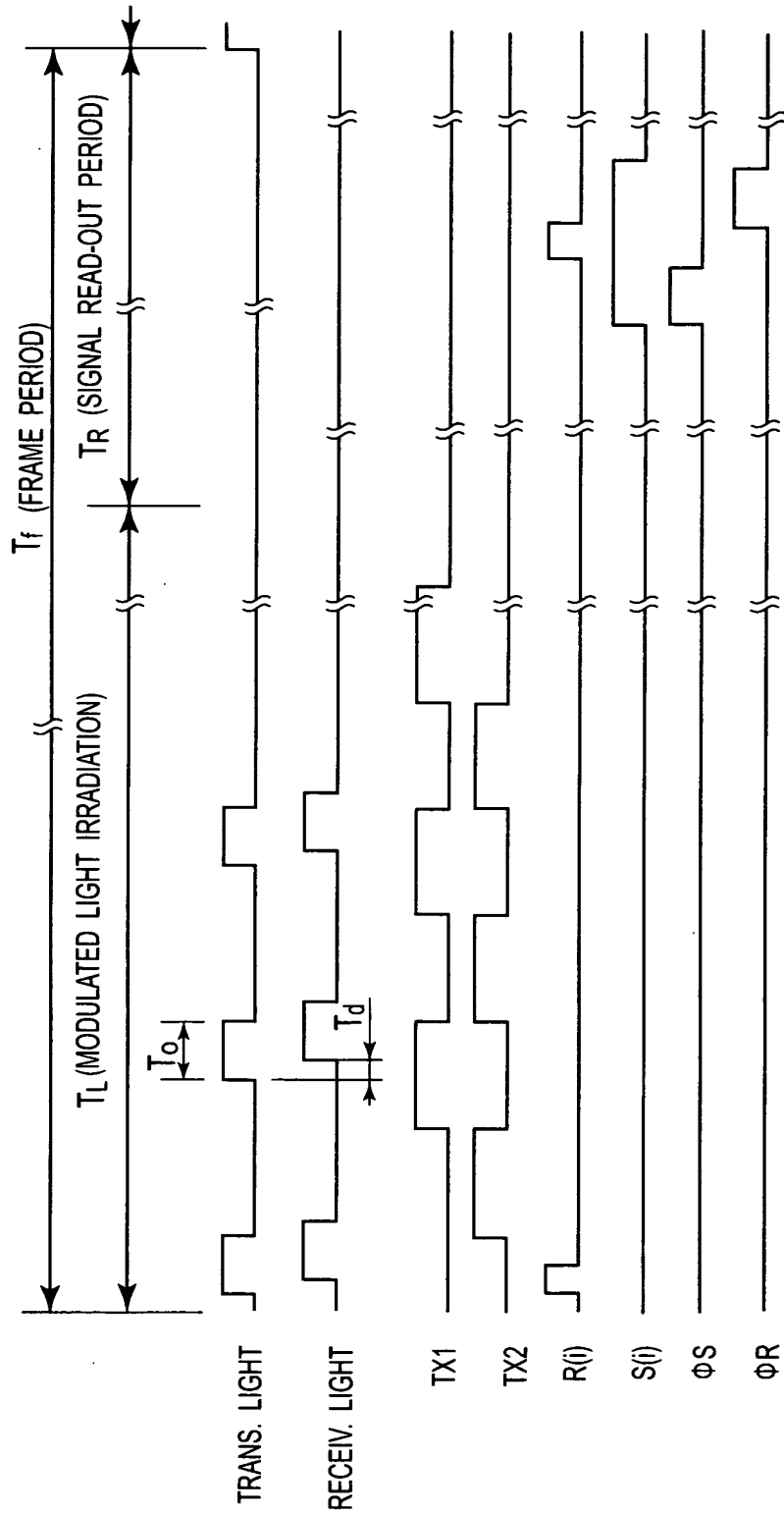


FIG. 4



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FIG. 5

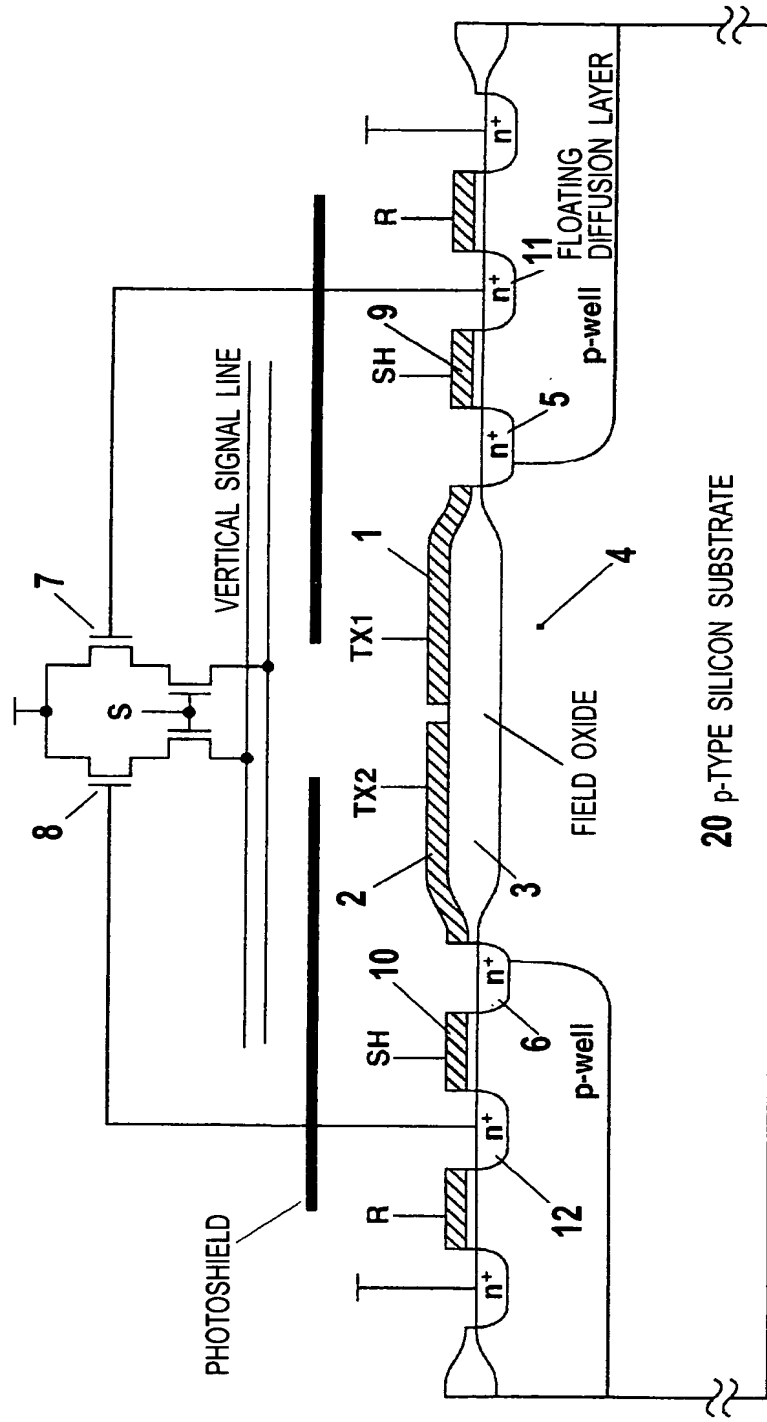
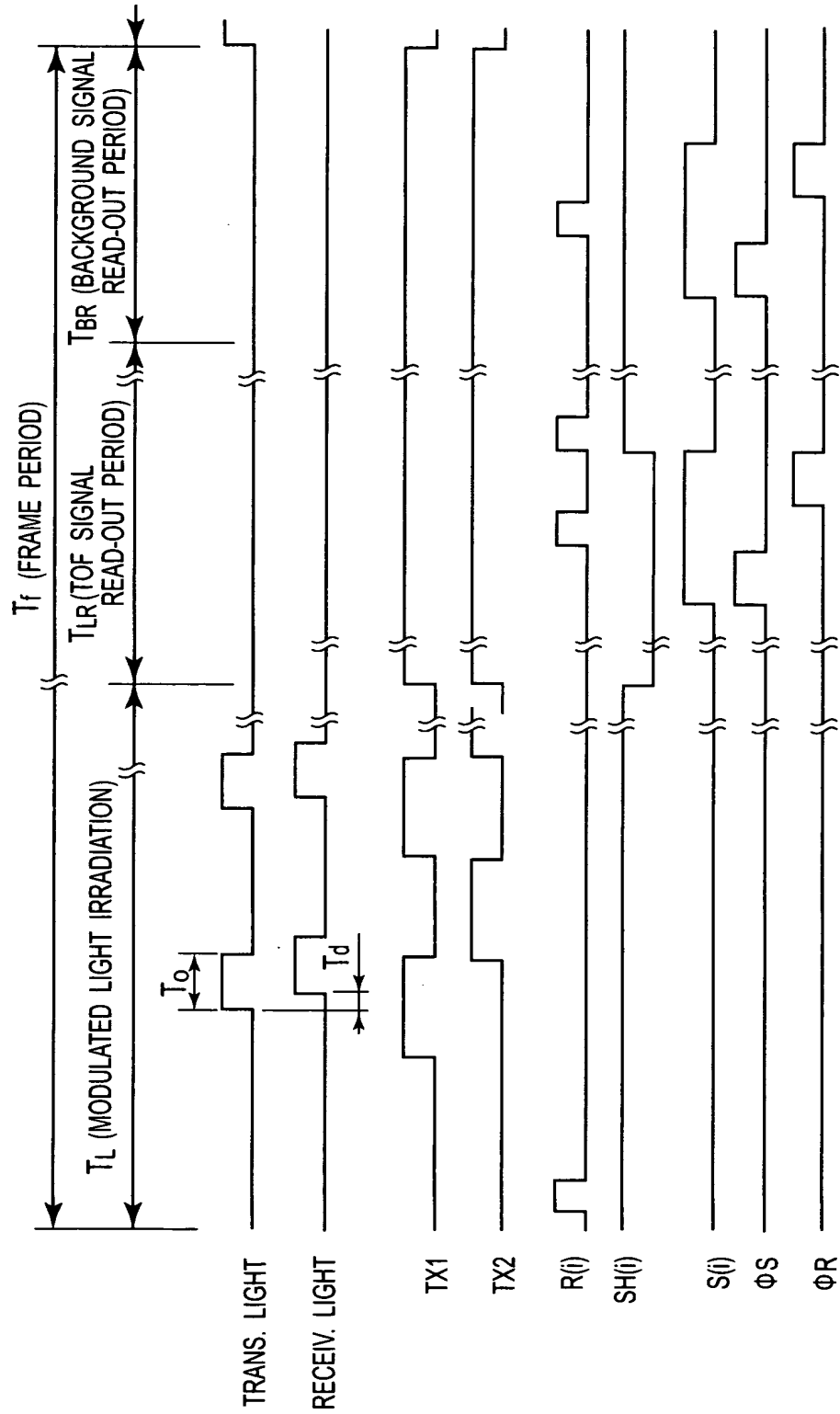


FIG. 6



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FIG. 7

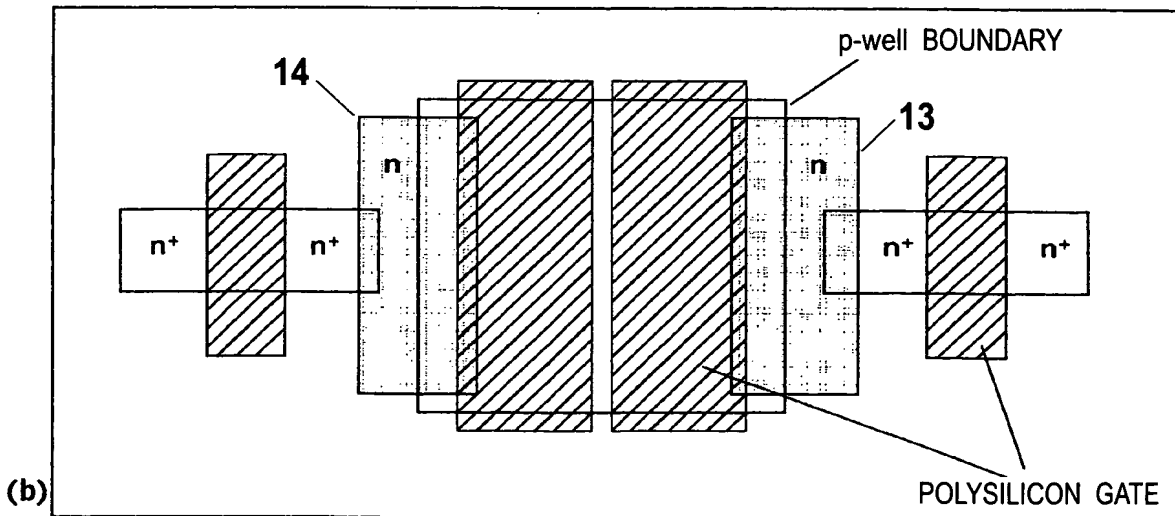
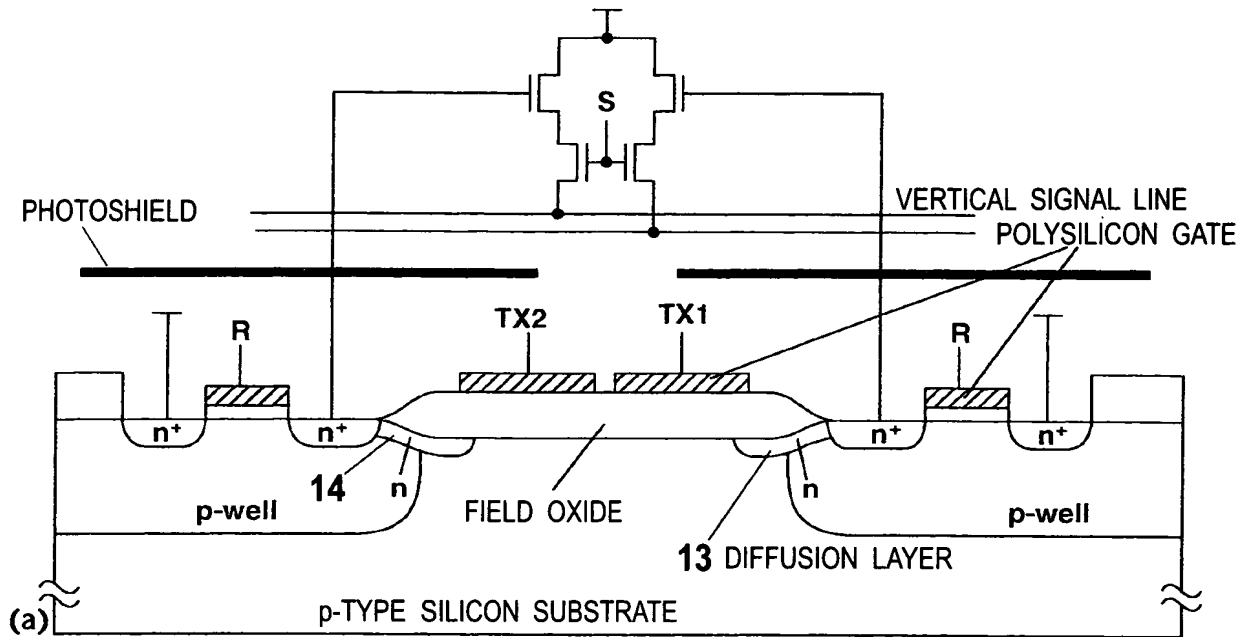
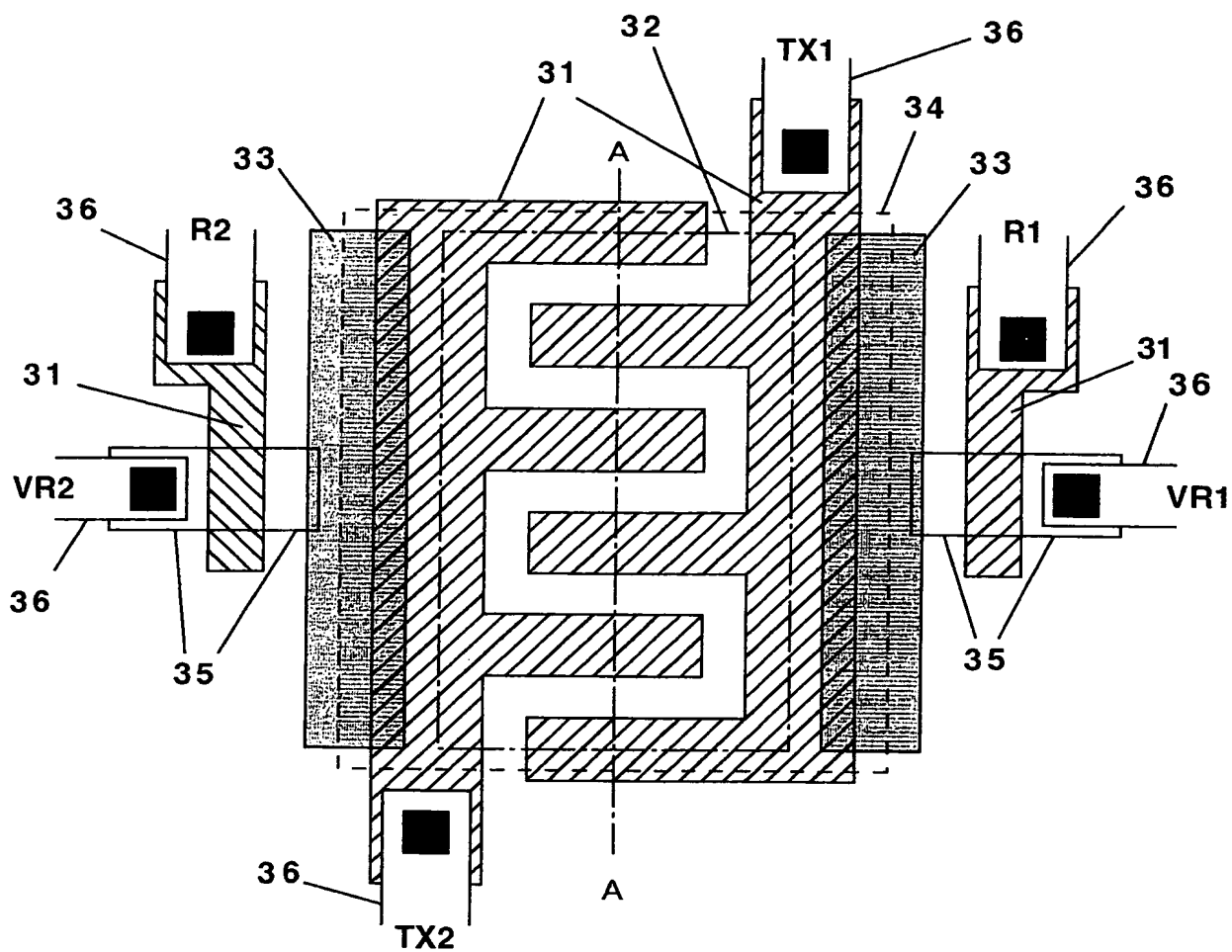
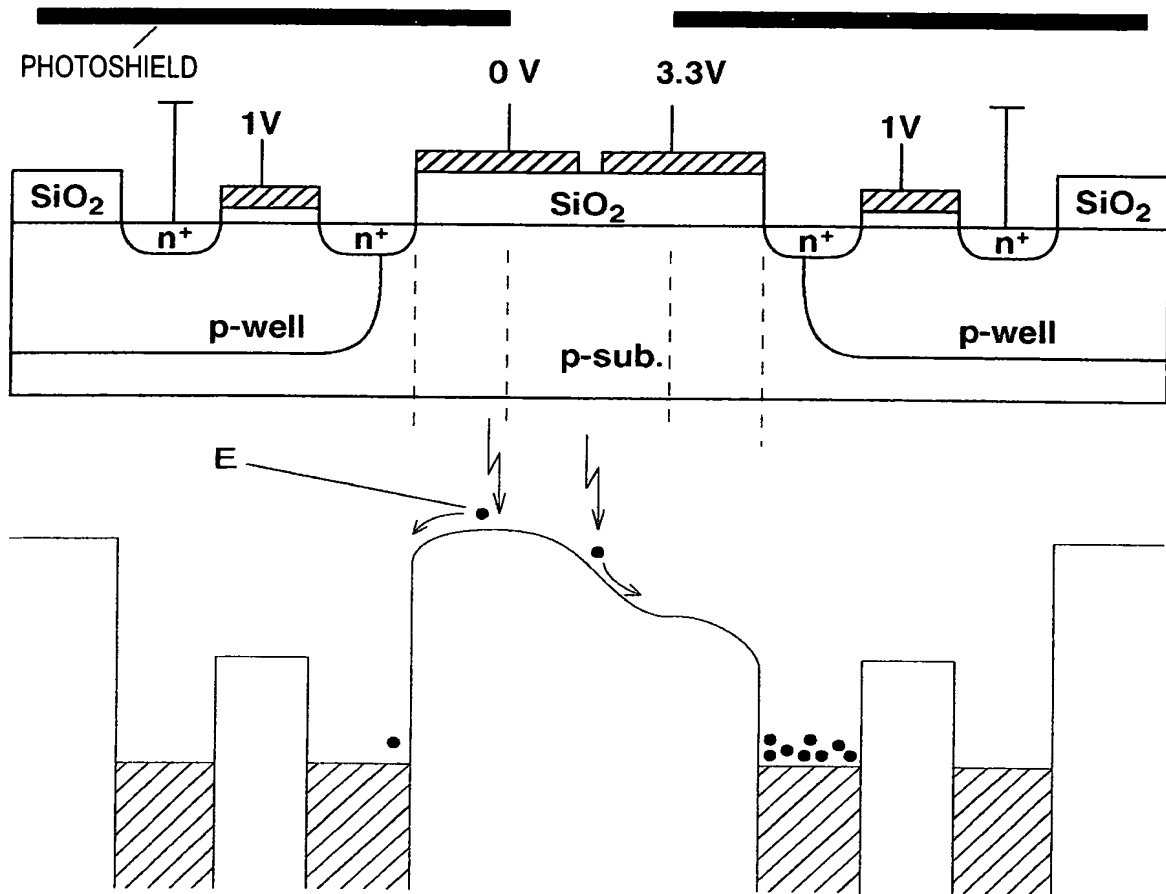


FIG. 8



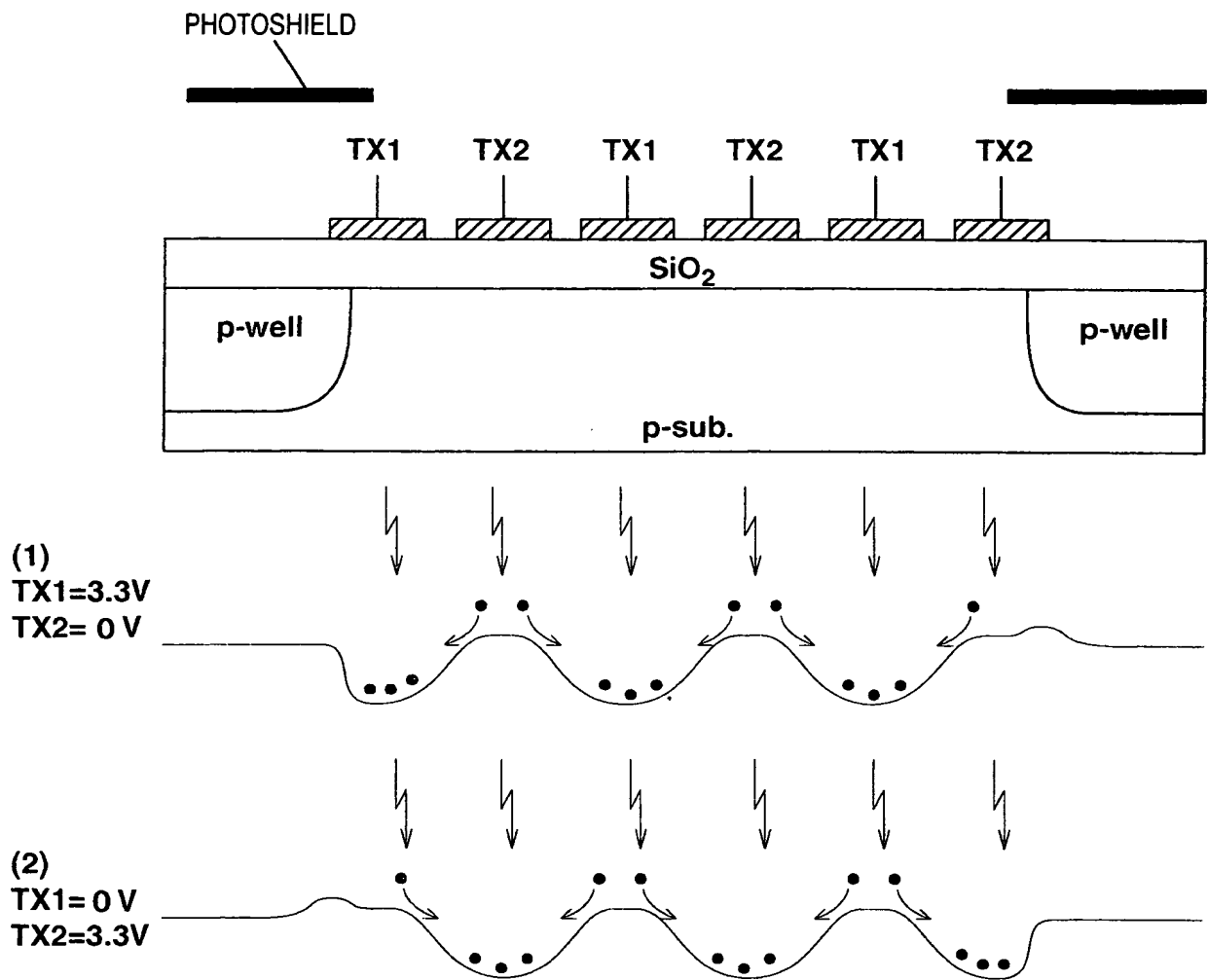
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FIG. 9



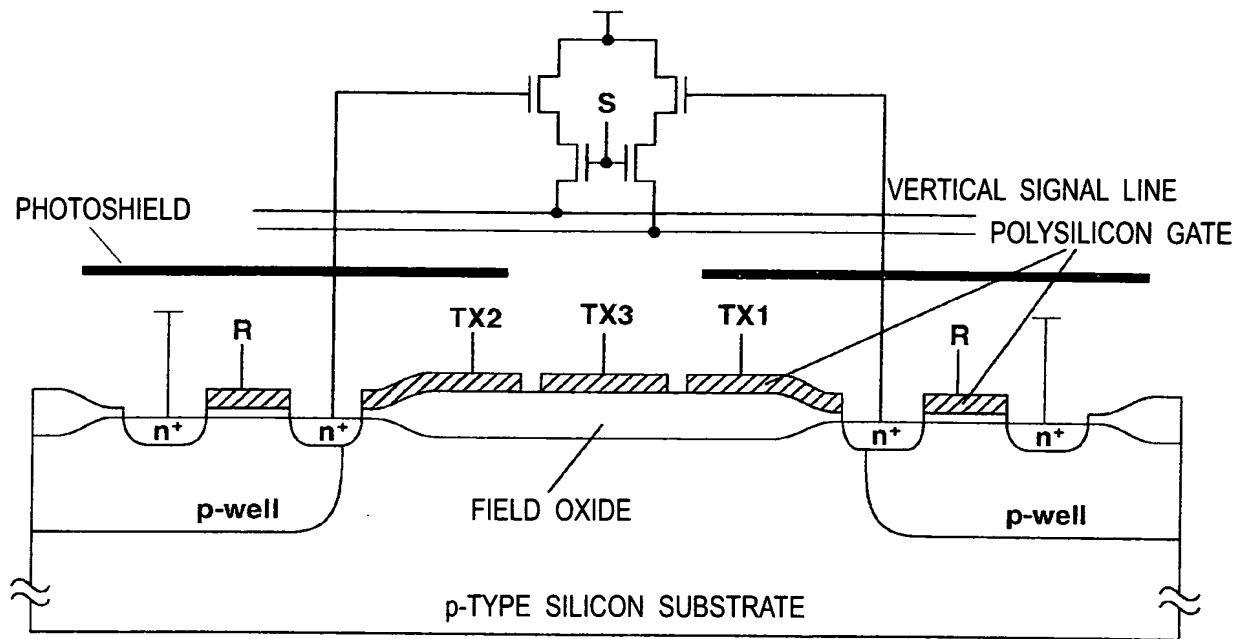
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FIG. 10



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FIG. 11



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FIG. 12

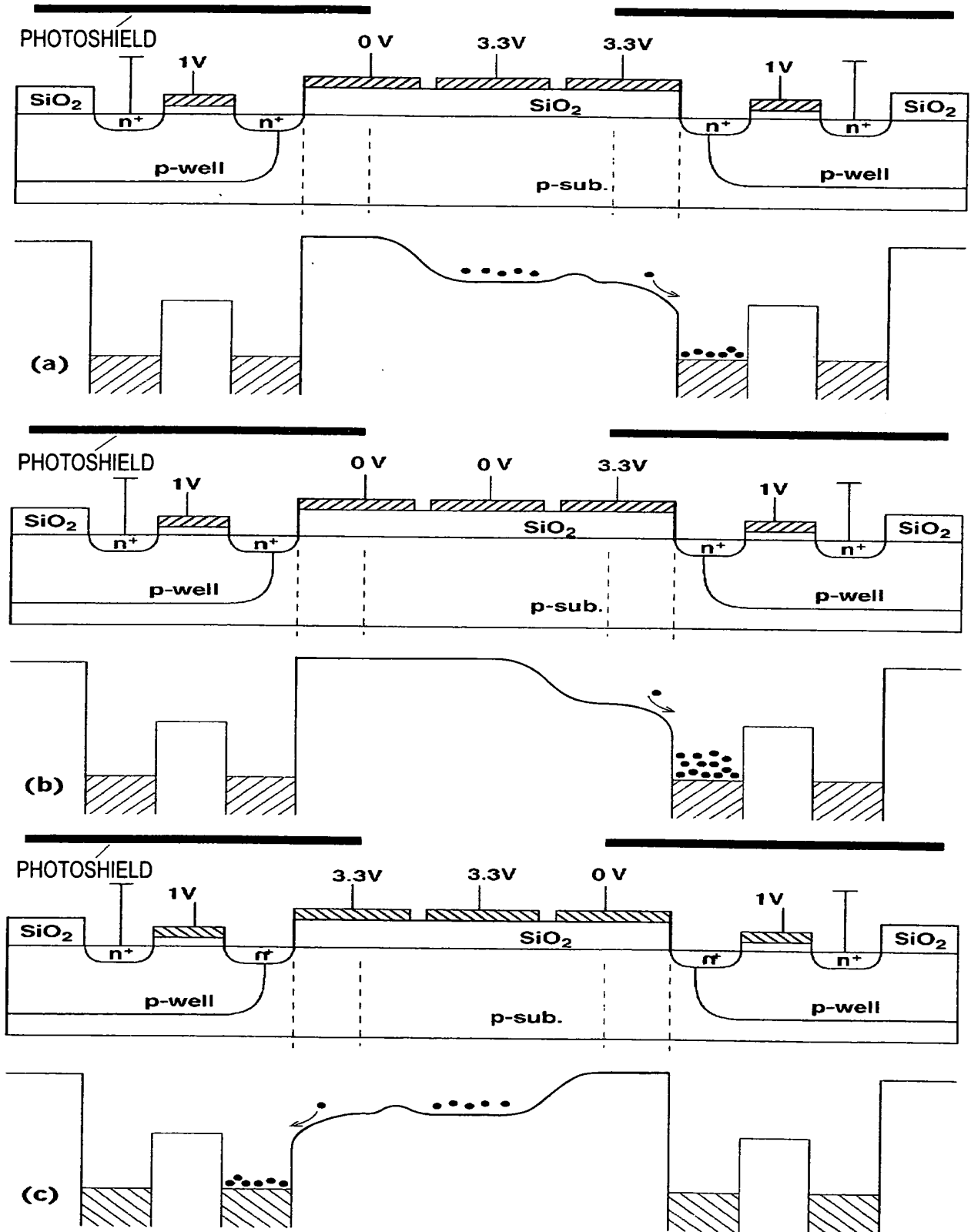
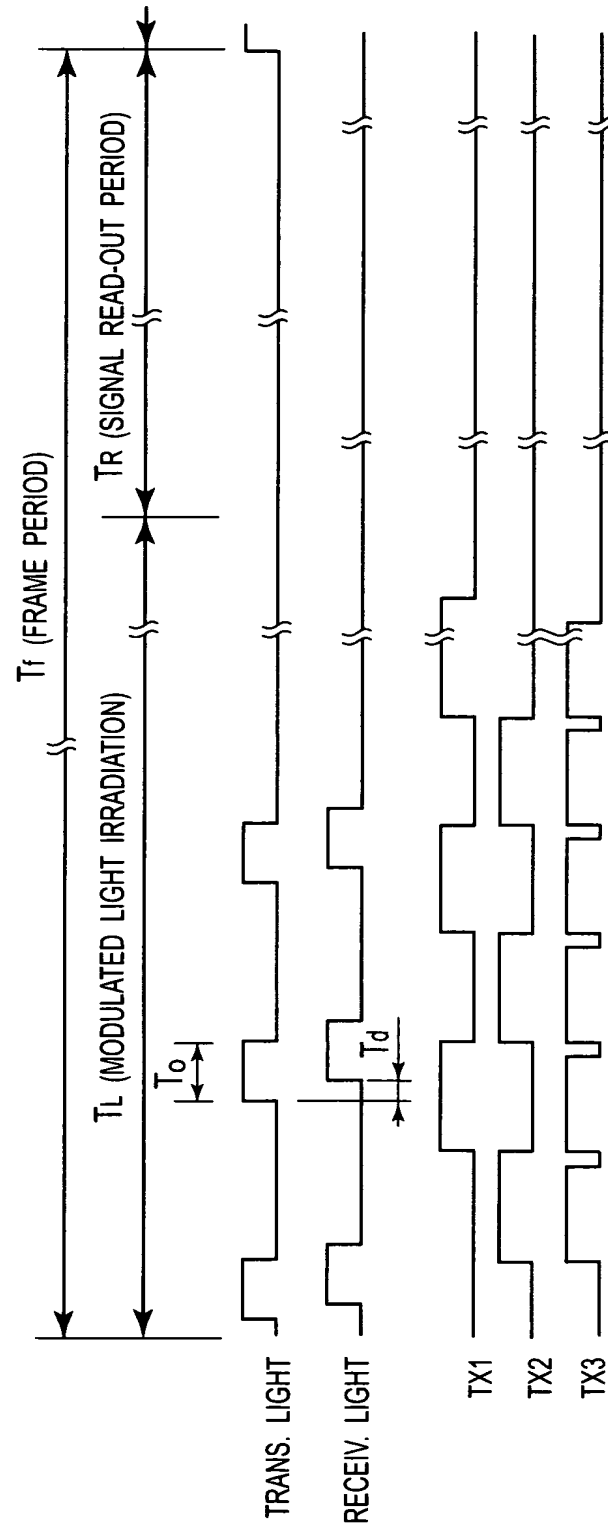


FIG. 13



A detailed cross-sectional diagram of a CCD sensor structure. The base is a p-TYPE SILICON SUBSTRATE. Above it is a p-well layer, which contains n+ regions for electrical contacts. A FIELD OXIDE layer covers the top of the p-well. On the field oxide, there are two transfer gates labeled TX1 and TX2, and two readout gates labeled R. The gates are made of POLYSILICON GATE material. A PHOTOSHIELD layer is on top of the gates. A VERTICAL SIGNAL LINE is shown on the right. A sense amplifier circuit, labeled 'S', is connected to the vertical signal line and the readout gates. The diagram shows the physical layout and electrical connections of the sensor components.